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OIPE JC163 JUL 22 2005 PATENT & TRADEMARK OFFICE

IN THE THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Guy Peter Bryan-Brown, et al.

Re: REQUEST FOR CERTIFICATE OF CORRECTION UNDER 37 C.F.R. 1.322 & 37 C.F.R. 1.323

Serial No.: 09/529,159

Filing Date: June 7, 2000

Our Ref.: B-3894PCT 617783-9

For: "LIQUID CRYSTAL DEVICE ALIGNMENT"

Date: July 20, 2005

Patent No.: 6,727,968 B1

Grant Date: April 27, 2004

Commissioner for Patents
POB 1450
Alexandria, VA 22313-1450

ATTENTION: Decision and Certificate of Correction
Branch of the Patent Issue Division

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT FOR PTO MISTAKE (37 C.F.R. § 1.322 (a)) and FOR APPLICANT'S MISTAKE (37 C.F.R. § 1.323)

Sir:

The original Letters Patent document issued from the above-identified application contains several errors.

1. Column 31, line 50 incorrectly reads "**the surface**" and should be corrected to read "**wherein the surface**".

2. Column 26, line 53 incorrectly reads "**an both walls**" and should be corrected to read "**on both walls**".

A copy of the Patent Letters Document pages showing these errors is attached.

The Applicant wishes to correct this error under 37 CFR. 1.323. The error was made in good faith through inadvertence, is of a clerical nature, is of a minor character, and does not constitute new matter or otherwise cause re-examination.

both the USPTO and the Applicants, a check in the amount of $100.00 to cover the official fees for such Certificate is enclosed. The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415.

Please send the Certificate of Correction to:

Richard P. Berg
LADAS & PARRY LLP
5670 Wilshire Boulevard, Suite 2100
Los Angeles, California 90036-5679

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first-class mail in an envelope addressed to the Commissioner for Patents, POB 1450, Alexandria, VA 22313-1450
ATTENTION: Decision and Certificate of Correction
Branch of the Patent Issue Division,
on July 20, 2005 by Shana Morda

Respectfully submitted,

Robert Popa
Attorney for Applicant
Reg. No. 43,010

LADAS & PARRY LLP
5670 Wilshire Boulevard
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Enclosures: Certificate of Correction (in duplicate)
Relevant Pages of the Patent Letters Document (1 page)
Check for $100.00

PTO/SB/44 (07-03)
Approved for use through 01/31/2004. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,727,968 B1

DATED : April 27, 2004

INVENTOR(S) : Guy Peter Bryan-Brown, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 31, line 50, change "the surface" to --wherein the surface--

Column 26, line 53, change "an both walls" to --on both walls--

MAILING ADDRESS OF SENDER: Ladas & Parry LLP
5670 Wilshire Blvd., Suite 2100
Los Angeles, CA 90036

PATENT NO. 6,727,968 B1

No. of additional copies

⇨ 1

PTO/SB/44 (07-03)
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JUL 29 2005

17. A twisted nematic liquid crystal device capable of being switched from a twisted state to a non twisted state comprising:

two cell walls enclosing a layer of nematic liquid crystal material;

electrode structures on both walls for applying an electric field across the liquid crystal layer;

a surface alignment on both cell walls providing alignment direction to liquid crystal molecules and arranged so that a twisted nematic structure is formed across the liquid crystal layer;

means for distinguishing between the two different optical states of the liquid crystal material; characterized by

means for reducing zenithal anchoring energy in the surface alignment on one or both cell walls, comprising:

an oligomer or polymer within the liquid crystal material at the cell walls.

18. The device of claim 17 wherein the means for reducing zenithal anchoring energy is an oligomer which is coated onto the inner surface of one or both cell walls either spread on the surface or added to the liquid crystal material.

19. The device of claim 18 wherein the means for reducing zenithal anchoring energy is an oligomer incorporated in the liquid crystal material.

20. The device of claim 17 wherein the means for reducing zenithal anchoring energy is N65, or MXM035.

21. The device of claim 17 wherein the means for reducing zenithal anchoring energy is a material containing esters, thiols, and/or acrylate monomers.

22. The device of claim 17 wherein the means for reducing zenithal anchoring energy reduces the liquid crystal material order parameter at or adjacent the cell walls.

23. The device of claim 17 wherein the means for reducing zenithal anchoring energy changes the phase of the liquid crystal material at or adjacent the cell walls.

24. The device of claim 17 including means for reducing azimuthal anchoring energy.

25. The device of claim 17 the surface alignment provides a pretilted nematic alignment on both cell walls.

26. The device of claim 17 wherein the surface alignment is provided by a rubbed polymer, a photo-ordered polymer or an obliquely evaporated inorganic material.

27. The device of claim 17 wherein the surface alignment layer is a surface monograting with an asymmetric groove profile.

28. The device of claim 17 wherein the alignment directions on the two surfaces are substantially perpendicular.

29. The device of claim 17 wherein the liquid crystal director twists by about 90° throughout the thickness of the cell.

30. The device of claim 17 wherein the liquid crystal director twists is greater than 180° and less than 360°.

31. The device of claim 17 wherein the nematic liquid crystal material contains a small amount (<5%) of a chiral dopant material.

32. A bistable nematic liquid crystal device capable of being switched into two different stable states comprising:

two cell walls enclosing a layer of nematic, liquid crystal material;

electrode structures on both walls;

a surface alignment on one or both cell walls providing two alignment directions to liquid crystal molecules with an amount of surface pretilt; means for distinguishing between switched states of the liquid crystal material; characterized by

means for reducing inelastic azimuthal memory anchoring energy in the surface alignment on one or both cell walls, comprising:

an oligomer or polymer within the liquid crystal material at the cell walls.

33. The device of claim 32 and including means for reducing zenithal anchoring energy.

34. The device of claim 32 wherein the means for reducing the anchoring energy is an oligomer or polymer which is either spread on the surface or added to the liquid crystal material.

35. The device of claim 34 wherein the oligomer is a material selected from:

Norland N65	
$-[S(CH_2)_6SCH_2CH_2O(CH_2)_6OCH_2CH_2]_n-$	HDVE (Hexane-1,6-diol di(vinyl ether))
$CH_2{=}CHO(CH_2)_6OCH{=}CH_2$	
$CH_2{=}CHOC_4H_9$	BVE (Butyl vinyl ether)
$HSCH_2CO_2(CH_2)_2OCOCHS_2H$	EGTG (Ethylene glycol bis(thioglycollate))
$HS(CH_2)_9SH$	NDT (Nonane-1,9-dithiol).

36. The device of claim 34 wherein the oligomer is an amount up to 10% by weight in the liquid crystal material.

37. The device of claim 34 wherein the chain length (n) is less than 100 repeat units.

38. The device of claim 34 wherein the oligomer's parameters of type, concentration, and chain length, are arranged to reduce the liquid crystal order parameter at or adjacent the cell wall.

39. The device of claim 34 wherein the oligomer's parameters of type, concentration, and chain length, are arranged to change the phase of the liquid crystal material at or adjacent the cell wall.

40. The device of claim 34 wherein the oligomer is a material that has been precured prior to introduction between the cell walls.

41. The device of claim 34 wherein the oligomer is a material that has been precured after introduction between the cell walls.

42. The device of claim 32 wherein the surface alignment is provided by a bigrating surface.

43. A smectic liquid crystal device comprising:

a liquid crystal cell including a layer of smectic liquid crystal material contained between two walls bearing electrodes and surface treated to give both an alignment and a surface tilt to liquid crystal molecules; characterized by

means for reducing anchoring energy at the surface alignment on one or both cell walls, comprising:

an oligomer or polymer within the liquid crystal material at the cell walls.